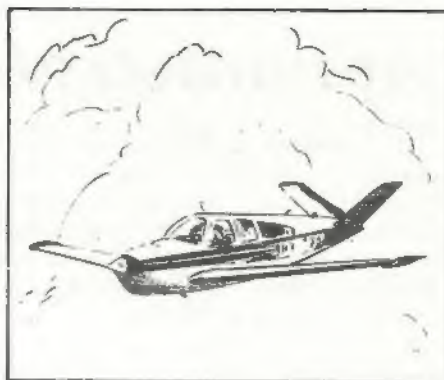


Montana and the Sky



Vol. 31, No. 1

MONTANA AERONAUTICS DIVISION

January, 1980

Frontier Inaugurates & Announces New Service

Frontier Airlines has announced its new Helena - Salt Lake City service which will be February 1, 1980.

At the same time, Frontier plans to discontinue the current route from Missoula and Spokane.

The early Salt Lake flight will allow passenger to make connections with other airlines to the west coast, Frontier spokeswoman Mary Budke said.

As a result of Frontier's route juggling Helena will maintain its Salt Lake City connection and two daily flights to Denver, which Western Airlines now provides.

Helena will also gain a daily round trip flight to Kalispell but lose the Frontier connections with Spokane and Missoula.

The changes reflect Frontier's consolidation into its route system of the service supplied to Helena by Western, which will pull out of the Capital City on or about February 1.

Ms. Budke said that Frontier's proposed round trip routing is Kalispell - Helena - Salt Lake City - Denver with an early morning departure, probably 6 a.m. out of Helena. There will be an evening return through the same cities out of Denver with the plane remaining overnight in Kalispell.

No firm flight times have been established, but there will be time to allow passengers to make connections to the west coast, includ-



Frontier Airlines on their inaugural flight to Helena.

ing an 8 a.m. flight to Los Angeles.

"It also would allow passengers to get from Salt Lake to Denver earlier than our present Helena - Denver flight, which gets to Denver at 12:25 p.m. Ms. Budke said.

The second daily Helena - Denver flight will not include Salt Lake City. It will be routed: Denver - Billings - Helena in the afternoon with a return Helena - Bozeman - Billings - Denver in the evening.

Frontier began its Helena - Denver service on November 8. It was routed: Denver - Billings - Helena - Spokane and Spokane - Missoula - Helena - Billings - Denver. In the flight plan Missoula and Spokane will be dropped. Northwest Airlines will now be the only airline to provide service

to Spokane.

The Helena - Kalispell connection was added because of popular demand. Ms. Budke stated that Frontier Airlines already has authority from the Civil Aeronautics Board to begin the new flights.

NOTAM

The Livingston Flight Service Station will temporarily be operating between the hours of 6:00 a.m. and 6:00 p.m. The Livingston FSS has experienced a reduction in personnel and until those positions can be filled (approximately two to three months) the operating hours will be reduced.

Administrator's Column

On December 12, I traveled to Washington, D.C. with delegates from the Governor's Essential Air Service Task Force to meet with the Montana and North Dakota Congressional delegates, the North Dakota Aeronautics Director, and Tom O'Leary, Jim Lightsey, and Chairman Marvin Cohen of the Civil Aeronautics Board. The purpose of the meeting was to discuss the essential air service determination for the Montana and North Dakota routes Frontier Airlines is currently serving with Twin Otters and is requesting CAB authority to terminate. Though the CAB has not announced their decision we are optimistic that the views and concerns expressed to Chairman Cohen and the other CAB officials will be carefully considered in making their decision.

We have been advised that the CAB will be making a determination on this route system sometime in late January.

★ ★ ★ ★ ★

The Montana Aeronautics Board, and the North Dakota Aeronautics Commission, on behalf of the communities of Havre, Miles City, Glasgow, Glendive, Sidney, Lewistown, and Wolf Point, and the North Dakota communities of Dickinson and Williston, have jointly filed with the CAB for the White House Pilot Program for Small Community Air Service Market Development. Governor Judge joined with the Aeronautics Board by submitting his personal endorsement with the application. If accepted, these communities would be eligible to receive assistance from the Civil Aeronautics Board, the Federal Aviation Administration, the Farmers Home Administration, the Economic Development Administration, and the Small Business Administration. This program will test the hypothesis that many small community markets with air travel obstacles can become self-sufficient if some assistance is provided to airports and airlines to remove the impediments.

The CAB will be making the preliminary selection of the communities which are eligible to participate. This selection will then be forwarded to the White House for final approval and should be forthcoming during the month of March.

This program is not to be confused with the issue of the small community essential air service determination. However, Governor Judge and the Montana Aeronautics Board, along with Governor Link and the Aeronautics Commission of North Dakota feel that we should be persuing an alternative program in the event that the CAB issues an undesirable small communities essential air service determination.

★ ★ ★ ★ ★

Our annual Aircraft Mechanics Refresher Seminar will be held in Helena on February 5, 6 & 7. We feel that this seminar will be both educational and beneficial to the Montana A&P mechanics. Both the Billings and Helena GADO's have agreed to participate and to renew the I.A. certificates upon completion of the course. I would like to encourage all A&P mechanics and I.A.'s to consider attending this year. If you need any further information or application forms please contact your local FBO or feel free to contact our office.

★ ★ ★ ★ ★

On behalf of the Montana Aeronautics Board and the Aeronautics Division I wish to thank you all for your involvement in aviation matter during 1979 and wish to extend our sincere wishes for a happy and prosperous new year.



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Creative Press

New Aircraft Service

Sun River Aircraft Service, a new aircraft maintenance facility, has recently opened for business in Great Falls. The shop is located at the Aerotronics hangar at the Great Falls International Airport.

Service will include annual and 100 hour inspections, but will not extend to performing major structural repairs. Shop manager Steve Tibbits assures us that Sun River Aircraft Service has reasonable rates and qualified personnel on duty to meet your needs.

Stop in, say hello and look over the new facilities.

Sun River Aircraft Service
RR 4 Box 243D
International Airport
Great Falls, MT 59405
(406) 761-1190

ADAP After '80



By: Dave Kneedler, Chief
Airport/Airways Bureau

Those of you who keep up with such things, are aware that the law, which allows money from the Federal Aviation's Trust Fund (your money) to be

spent on varying kinds of improvement projects at community airports will expire at the end of this fiscal year. For those of you who don't (and those who do) please stand by for some additional information which hopefully won't classify, in your book, as trivia.

There is general agreement within the industry that some sort of legislation will be enacted to extend the Airport Development Aid Program (ADAP) and several efforts are currently underway to accomplish this. As with many issues there are differing opinions as to exactly what the law should say and do—a "social disease" which seems to infect the aviation community to a greater extent than many other segments of our society. By now those of you who have kept up with this issue probably can guess what the jist of this article is to be.

The Federal Aviation Administration, working from it's headquarters in Washington, D.C. down through the region offices (Denver in our case) has traditionally administered the Airport Development Aid Program. One of, what has turned out to be, the most controversial ideas for renewal after FY 80 is contained in proposed legislation submitted by the Carter Administration. This dreadful and threatening idea, that has so alarmed some people within the industry, is that perhaps it would be more to the point for the states to administer a portion of the ADAP Program. Specifically, the ominous proposal, which has the representatives of aviation's alphabet groups (GAMA, NATA, AAAE, AOCI, et al) scurrying around Washington claiming "unanimous opposition" in the aviation community is that general aviation airports and certain smaller air carrier airports *which voluntarily choose* to deal with the state instead of the federal government in their airport development projects should be allowed to do so. The federal money to be spent would come in the form of a block grant to a *qualified* state aeronautics agency for it's use in meeting it's aviation *system* needs on a priority basis. Sound logical? Not to some. The "unanimous opposition" seems to have overlooked some

important facts:

1. The administration's proposal specifically states that only those airports voluntarily choosing to do so would work through the state. Those wishing to continue working with the federal government would be free to do so.

2. The proposal states that only those state aviation agencies which have *proven* themselves, to the satisfaction of the Secretary of Transportation, to be qualified to administer part of ADAP would, upon volunteering, be allowed to do so. Specific qualifying stipulations are listed.

3. Two recent studies, independently commissioned to measure the efficiency and effectiveness of state involvement in airport development against that of the federal government have shown conclusively that the states have historically accomplished more, in less time, with fewer dollars.

In the more than thirty years that your Aeronautics Division has handled Montana's involvement we have administered millions of your fuel tax dollars in more than 260 separate construction and improvement projects border to border across our state. We firmly believe that the individual states are in a much better position to know where the greatest needs are within their aviation systems and are therefore in a better position to administer ADAP money within their boundaries. We would like to know whether you agree and would approve of such a role as proposed in the Carter Administration's bill HR3745. We will appreciate receiving any comments, either pro or con, you may have on this matter.

'80 Airport Directory

We hope to send out the 1980 edition of the *Montana Airport Directory* by February 1. This year the directory has over two hundred changes from last year. If you have not ordered your new directory, contact our office.

Airport Markers



By: Jerry Burrows,
Aviation Representative

Valley Illuminators in Tukwila, Washington has available retro-reflective airport markers for use on runways, taxiways, thresholds, and for obstruction marking.

The Montana Aeronautics Division has a contract with Valley Illuminators and can provide these markers at wholesale cost. Of course, this is considerably less than the normal retail price. The program will be handled similar to our resale of airport bulbs, fixtures and wind-socks.

These markers offer low cost installation with a minimum of maintenance. They require no electrical power and are highly visible from aircraft lights. They are fully FAA approved and qualify under the Airport Development Aid Program.

The markers can be used on your ranch, farm strip, municipal airport or perhaps a cross-wind runway that is not lighted. They also can be used to mark obstructions or other areas that aircraft should avoid.

The markers are hollow aluminum cylinders which are 12" high by 6 1/4" in diameter. As is evident by the accompanying pictures the middle six inches of the cylinder have a retro-reflective material which reflects the light directly back to the source. The top and bottom 3" band has a highly visible fluorescent material for day time use. The reflectors are mounted to a one inch aluminum tube which

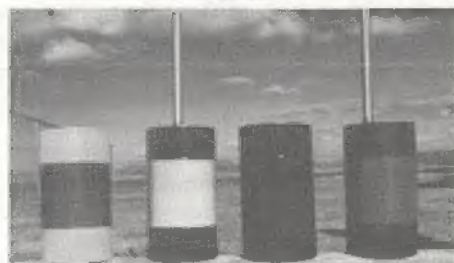
fits into a piece of pipe in the ground. An oilite bearing fits into the pipe section in the ground and allows the marker to weather vane or rotate relative to the wind or aircraft blast. More technical specifications are available if you would like them.

The markers come in white, yellow, blue, green, and red, with the white and yellow or the amber colored markers most frequently used. We have several of the markers at our office and will be happy to make them available for inspection.

Should a community wish to use these for marking the entire runway, our office would assist with the engineering and surveying requirements.

The markers have been used by many private firms, individuals, communities and states. Alaska is currently utilizing these markers at over 130 airports throughout their state.

If you are interested in this system or wish to inspect some of the sample markers we have please contact us.



Universal Air Services

Universal Air Services, a new aviation full-service operation, is in business at the city-county airport in Havre and offers air taxi, flight instruction, fuel and the refurbishing of aircraft.

Partners in the business include Mike Knudson, Doug Sterrett and Tom Farrell.

Mike Knudson, a native of Havre, is general manager and pilot. He has a commercial instrument rating and multi-engine and flight instructor certificates.

The Cessna Pilot Center operated in conjunction with Universal Air Services is operated for flight instruction, Cessna aircraft sales and the sale of other aircraft.

Tom Farrell, who operates Farrell Aircraft offers aircraft maintenance.

Doug Sterrett, who like Mike is a Havre native, refurbishes and paints aircraft. Many of his customers come from considerable distance to have their planes painted.

The facilities of Havre Aviation have been purchased by Universal Air Services.

The air taxi operation is on call on a 24-hour basis. Stop in and say hello to Tom, Doug and Mike.

New Receiver

The FAA has installed a new transmitter receiver on McDonald Pass. This site transmitting and receiving on 119.5 Helena approach control frequency is providing excellent radio coverage for IFR and VFR pilots in the Seeley Swan, Deer Lodge and Boulder areas. If pilots are unable to establish contact with FSS flight watch in these areas they are welcome to call Helena approach control on this frequency.

Calendar

February 5-7 — Aviation Mechanics Refresher Seminar. Contact Aeronautics Division 449-2506 for details.

February 14-16 — Montana Aviation Trades Association Convention, Colonial Inn, Helena. Contact Karen Lathrop at 453-4021 (Great Falls) for details.

February 23 — Montana Pilots Association State Board meeting, 11:00 a.m., Pilot's Lounge, Billings Airport.

February 23 — Montana Antique Aircraft Association meeting, 6:30 p.m. in Billings. Contact Ray Curtis for location of meeting, 248-1191.

March 7-9 — Flight Instructor Refresher Clinic. Contact Aeronautics Division 449-2506 for details.

March 11-13 — 6th Annual Aviation Maintenance Seminar, North Dakota. Contact David Carlson, Williston (701) 572-3773.

June 13-14 — Montana Pilots Convention, Billings

June 29 — Flying Farmers Queen Joan Wilson Fly-In, Moore, MT.

July 19-20 — 3rd Annual Beacon Star Antique Airfield Fly-In.

October 3-5 — Montana Flying Farmers Convention, Helena.

October 4 — Halloween Air Race.

Current

The ability to fly safely by instruments in bad weather is a "use-it-or-lose-it" skill, the National Transportation Safety Board said.

The warning to general aviation (non-airline) pilots was voiced by the Safety Board with issuance of a volume of 899 general aviation accident reports - Volume 3 in its series of Aviation Accident Reports for 1978. The computer-printout reports document the causal factors assigned by the Board in each case.

One of the reports in Volume 3 covered an instrument weather accident that resulted in the in-flight breakup of a Bonanza N-35 aircraft near Kennesaw, Georgia. The pilot-

owner, age 56, held a commercial certificate and had acquired 700 hours total flying time. He was also instrument rated.

The pilot had flown his Bonanza N-35 from Ohio to Naples, Florida, in December, 1977, but returned home to Ohio via airline. At that time he advised the airport manager that he did not want to fly home "because of bad weather." He returned to pick up the Bonanza in April, 1978, and departed Naples on the 26th with his wife as a passenger.

Prior to departure he received a weather briefing from the Fort Meyers Flight Service Station (FSS) but did not file a flight plan.

At about 2:37 p.m. the pilot contacted the Atlanta FSS and reported coming out of Columbus, Georgia, and requested the weather at Carrollton. He was advised they did not get Carrollton weather but he was given the weather for Atlanta, and Anniston, Alabama, which should be "roughly about the same." He was also given the Rome, Georgia, weather as "two thousand scattered, four thousand overcast, visibility one, two."

The pilot replied, "Well, I'm VFR on top, but I had planned on uh, landing Carrollton, or Rome and I have the weather forecast . . . I was wondering what the situation was." About two minutes later Atlanta advised, "O.K., there is uh, also an airmet (special aviation meteorological report) out for icing in the clouds between five thousand and ten thousand feet, so you can expect to pick up some rime ice on your decent through, uh, clouds."

At about 3:05 the pilot informed Atlanta he was at 12,500 on top and requested an Instrument Flight Clearance to Rome. Subsequently, Atlanta approach control cleared him to descend and maintain 5,000 feet. At 3:32 Atlanta requested his altitude and the pilot replied, "Ah, nine five Yankee to sixty five." This was his last known transmission.

A number of ground witnesses observed the in-flight breakup of the aircraft. One, a retired Navy aviation mechanic, reported, "I looked up and saw this aircraft in a near 45 degree pitch down attitude and the engine

sounded as if it was speeded up to max rpm. The aircraft then seemed to try and pull out of its 45 degree angle and at that time the aircraft came apart and looked as if the right wing came off first . . . I would estimate the altitude at time of separation to be a minimum of 700 to 1,000 feet . . . the weather was cloudy, windy with rain."

The pilot and his wife were killed. In determining the probable cause of this accident the Safety Board found that "spatial disorientation" of the pilot caused him to exceed the designed stress limits of the aircraft during an attempted operation beyond his ability. The subsequent airframe "separation in flight" occurred in instrument weather conditions that included icing. The pilot was instrument rated, the Board noted, but had "no logged aircraft instrument time since 1974."

In its investigation of the Georgia crash, the Board found that the pilot had flown the Bonanza a total of 133 hours during the five years and five months that he owned the aircraft. His instrument time totalled 4 hours (simulated) during the preceding 12 months while his logbook revealed a total of 8 hours and 30 minutes of actual weather time, with last entry of 20 minutes in 1974.

Holding an instrument rating, the Board observed "does not by itself make a competent instrument pilot. Pilots must fly in instrument conditions regularly, or lose the proficiency demonstrated when they successfully passed the instrument rating flight examination. In the Georgia accident, the pilot had lost that proficiency, with fatal results."

Pilot Aids

Montana Aeronautics Chart	\$2.00
Montana Airport Directory:	
Loose leaf binder	\$1.00
Insert	\$1.50
Annual Subscription to	
Montana and the Sky	\$2.00

Light Twin Flyers

By: Don Paul

Accident Prevention Specialist

If you fly a light twin engine aircraft, do you feel competent to handle any emergency that may occur?

Accidents in light twin engine aircraft are increasing at an alarming rate. There is growing evidence that many pilots do not understand the basic aerodynamic forces that affect an aircraft under engine-out conditions. Engine failure, or power-loss accidents, from the takeoff configuration are the most serious problems and are accounting for the largest share of the fatal accidents.

A recent study by the National Transportation Safety Board on accidents following engine failure in light twin engine aircraft showed that the most common factor in the accidents was an apparent lack of crew proficiency in response to the emergencies.

Often these accidents involve some degree of panic, probably related to inadequate immediate recall of the exact emergency procedures or lack of confidence in ability to execute the emergency procedures. These symptoms are indicative of insufficient recurrent training.

In the five years from 1972 through 1976, there were 477 accidents following engine failures or malfunctions in light twin engine aircraft. The most prevalent accident following engine failure was a landing-type accident. These, however, were almost never fatal, but accidents involving stalls, collision with ground or water and collision with other obstacles accounted for 92 percent of the fatal accidents following engine failure.

The flight review required by FAR 61.57 is an excellent way to find out if we are proficient; but if we take that flight review in a single engine aircraft, that in no way checks our ability to handle engine-out emergencies in a twin engine aircraft.

When was the last time you practiced engine-out emergencies? How about considering flying with a flight instructor and review those emergencies?

The FAA has two brochures, "Flying Light Twins Safely" and "Always Leave Yourself an Out", both of which are excellent in bringing your knowledge of light twins up to proficiency. These and many more brochures may be obtained free by calling or stopping by your local General Aviation District Office. For the Helena area call 449-2570 and for the Billings area call 245-6179.

Airborne Hunting

The public should be aware that the Ninth Circuit Court of Appeals in San Francisco, California has recently reversed U.S. District Judge Battin's decision that the Federal Airborne Hunting Act was unconstitutional.

The Court of Appeals found that the Act was in fact unconstitutional and not in conflict with Montana State Law.

Special Agent Rod Hanlon of the U.S. Fish and Wildlife Service will be investigating complaints of violations and some of which will be referred to the U.S. Attorney's office for prosecution.

Essentially the Act prohibits the shooting or harassment of any bird, fish or other animal while airborne, unless specifically authorized to do so by permit or license.

The penalty for this violation could be \$5,000 or imprisonment for one year, or both. Additionally, all equipment, including the aircraft, are subject to seizure and forfeiture.

For further information regarding this law or to report a violation please contact Special Agent Rod Hanlon at 453-4761 or write to:

Special Agent
U.S. Fish & Wildlife Service
P.O. Box 2142
Great Falls, MT 59403

Are You Alaska Bound???

Attention Alaska bound pilots! The Canadian Ministry of Transportation has published a revised edition of their *Air Tourist Information* — Canada pamphlet (TP771). They also have published an aeronautical chart covering the Alaska (ALCAN) Highway through Canada, "Alaska Highway, Fort Nelson to Northway." The chart is accompanied by a brochure which describes flying along the Alaskan Highway (TP2168).

These packets are provided at no cost to the pilot but are only available at the Cut Bank Flight Service Station. Pilots wanting to order these and other Canadian publications may do so by writing to: Canadian Map Office, 615 Booth Street, Ottawa, Ontario, KIA OE9. A money order must accompany all orders. The Aeronautical Chart is \$1.50 and both brochures are free.

New Runway Light System in Conrad

A new runway light system was recently installed at the Conrad airport.

The airport lights will come on at dusk and shut off at a predetermined time throughout the year depending on the daylight hours.

If a pilot desires to land at Conrad Airport after the lights have been shut off they may key the mike on uni-com frequency 122.8 three times and the VASI and low intensity lights will come on. These lights will stay on approximately 15 to 20 minutes.

If high intensity lights are required, key the mike on the same frequency two more times (a total of five times). If runway and identifier lights (REIL) are required, key the mike two more times (a total of seven times).

If after you've got the airport lit up with the high intensity lights and the REIL on and you wish to have only the low intensity lights on, simply key the mike three additional times.

CONGRATULATIONS!

FAA Certificates Issued Recently to Pilots

PRIVATE

Dewey A. Hurick, Miles City
Delbert F. Dinstel, Miles City
Norris G. Newberry, Glendive
Rodney P. Kalberer, Sidney
Gerald G. Larson, Williston, ND
Galen S. Naylor, Billings
Bradley J. Duerst, Billings
John R. Gilbert, Billings
Joseph C. Marble, Billings
Larry L. Luckinbill, Columbus
Garry M. Kyyszak, Missoula
Thomas M. Perkins, Deer Lodge
Jeffrey G. Mitchell, Dillon
Lawrence J. Bennett, Great Falls
Peter B. Rogers, Utica
Gregory K. Robison, Hysham
Curtis C. Dahlgarrd, Shelby
Walter J. Williamson, Great Falls

INSTRUCTOR

James. L. Herron, Lewistown
(Reinstate)
John D. Lynch, Billings (Reinstate)
James R. Corey, Lewistown
(add Heli)
Charles W. Rogers, Lewistown
(add Heli)
Leigh R. Aslakson, Billings (Renew)
Russell D. Cebulski, Malta (Renew)
Daniel K. White, Billings (Renew)
Darrel C. Millard, Williston, ND
(Renew)
Donald N. McCaulay, Billings
(Renew)
Kenneth N. Wendland, Billings
(Reinstate)
Robert R. Craig, Bozeman (Renewal)
Donald J. McGurk Jr., Butte (Heli)
James W. Kruger, Lakeside
Richard E. Geiger, Jr., Helena
(Basic Ground Instructor)
Dave W. Schuler, Dutton (Private)
Glen M. Hargrove, Bozeman
(Private)
Michael L. Green, Dutton (Private)
John A. Rasmussen, Great Falls
Robert E. Toombs, Butte (ASEL)
Keith P. Johnson, Butte (CAMEL)

ATP

Charles B. Koehler, Whitefish
(AMEL)

COMMERCIAL

Gregory S. Ugrin, Miles City
Gary R. Meyer, Billings
Bruce D. McCallum, Shepherd

MULTI-ENGINE

Jeffrey S. Mattheis, Billings
Wayne A. Edsall, Bozeman

GLIDER AERO TOW

Steven D. Thompkins, Bigfork
(Private)
Edwin C. Anderson, Bigfork (Private)

Cold Weather Ops

The FAA has published an Advisory Circular (AC-91-13C) relating to operating your aircraft in the winter months. The main parts of this AC include: preparation of the aircraft for cold weather, preflight inspection, taxiing, takeoff, enroute, arrival and post flight. We would like to focus on your "preparation of the aircraft for cold weather," this month.

a. Insulation Against Heat Loss (reciprocating engines). In extremely cold temperatures all oil lines, oil pressure lines, and tanks, if possible, should be inspected for proper insulation to preclude the possibility of oil congealing. The insulation used must be fireproof material and installation should be accomplished by an experienced A and P mechanic.

b. Baffling and Winter Covers. Baffles, winter fronts, and oil cooler covers are recommended by some manufacturers. FAA approval is required for installation unless the aircraft manufacturer has provided for their approval.

c. Oil and Grease. The viscosity of the oil and grease used is very important in cold weather operation. Use only the grades of oil and grease specified by the manufacturer.

d. Oil Breather (Reciprocating Engines). Frozen breather lines can create numerous problems. When crankcase vapors cool, they may condense in the breather line and subsequently freeze it closed. Special care

is recommended during the preflight to assure that the breather system is free of ice.

e. Hose Clamps, Hoses, Hydraulic Fittings, and Seals. An important phase of cold weather preparation is to inspect all hose lines, flexible tubing, and seals for deterioration. Replace unservicable components.

f. Cabin Heater. Many aircraft are equipped with cabin heater shrouds which enclose the muffler or portions of the exhaust system. It is imperative that a thorough inspection of the heater system be made to eliminate the possibility of carbon monoxide entering the cockpit or cabin.

g. Control Cables. Because of contraction and expansion caused by temperature changes, control cables should be properly adjusted to the aircraft manufacturer's specifications.

h. Oil Pressure Controlled Propellers. Propeller control difficulties can be encountered due to congealed oil. The installation of a recirculating oil system for the propeller and feathering system has proven helpful in extremely cold climates. Caution should be taken when intentionally feathering propellers for training purposes, to assure that the propeller is unfeathered before the oil in the system becomes congealed.

i. Care of Batteries. If the airplane must be parked outside, wet cell batteries should be kept fully charged or removed from the aircraft to prevent loss of power caused by cold temperatures and to guard against battery freezing.

j. Wheel Wells and Wheel Pants. During thawing conditions, mud and slush can be thrown into wheel wells during taxiing and takeoff. If it then freezes during flight, this mud and slush could create landing gear operational problems. The practice of recycling the gear after a takeoff can be used as a preventive procedure. However, the safest procedure is to avoid these surface conditions with retractable gear aircraft. It is recommended that wheel pants be removed from fixed-gear aircraft to prevent the possibility of frozen substances locking the wheels or brakes.

I'm Not Lost!

Unsure, lost or temporarily disoriented—who of us has never been in that situation? There is no shame connected with seeking assistance; it would, however, be shameful not to ask for help and suffer consequences that might have been avoided.

There are basically five methods of orientation: 1. Direction Finding (DF), 2. Navigational Aids, 3. Pilotage, 4. Sighting by other aircraft, and 5. Radar. This article will be about one of them—the DF.

In the FSS the DF, reduced to very general terms, consists of a directional antenna, a VHF receiver and shows the magnetic direction of an aircraft from the station.

To the pilot it requires only a functioning two-way radio. There are generally three types of purposes of DF: 1. Directional guidance, 2. Position fixing service, and 3. Instrument Approach guidance (at some locations).

The FSS Specialist will use the DF to locate lost aircraft, provide guidance to an airport or area of radar coverage or an area where VFR conditions exist. The DF service the FSS most frequently provides is directional guidance whereby the pilot is given information that will enable him to fly to a predetermined position or along a specified track.

Remember, if you find yourself "unsure of your position," don't tool around aimlessly at 75% power hoping that something good will happen before you run out of gas.

Make something good happen by taking the initiative and seeking assistance. There are DF's available at Billings, Cut Bank, Great Falls, Lewistown, and Miles City FSS. There are millions of dollars worth of trained men and reliable equipment just waiting at the end of your microphone! If you don't key the mike, the FSS will never know you were there.



2,500 copies of this public document were published at an estimated cost of \$.18 per copy, for a total cost of \$447.17, which included \$230.00 for printing and \$217.17 for distribution.

MEMBER

NATIONAL ASSOCIATION OF STATE AVIATION OFFICIALS

PURPOSE— "To foster aviation, as an industry, as a mode of transportation for persons and property and as an arm of the national defense; to join with the Federal Government and other groups in research, development, and advancement of aviation; to develop uniform laws and regulations; and to otherwise encourage cooperation and mutual aid among the several states."



P.O. Box 5178

Helena, Montana 59601

January, 1980

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